WHAT IS CLAIMED IS:

1. A current source comprising:

a first stage coupled to an input current source, the first stage containing circuitry to receive an input current provided by the input current source;

a second stage coupled to the first stage, the second stage comprising:

a first transistor and a second transistor serially coupled together, wherein a first terminal of the second transistor is coupled to a second terminal of the first transistor;

a third transistor having a first terminal coupled to a third terminal of the first transistor; and

a level shifter coupled to a third terminal of the third transistor and the first terminal of the second transistor, the level shifter containing circuitry to elevate a voltage at a third terminal of the second transistor, wherein the level shifter is arranged in a source-follower configuration.

2. The current source of claim 1, wherein the level shifter comprises a fourth transistor having a first terminal coupled to the third terminal of the third transistor and a third terminal coupled to the first terminal of the second transistor.

3. The current source of claim 2, wherein the first, second, and third transistors are N-type MOSFET (metal-oxide semiconductor field-effect transistors), and wherein the fourth transistor is a P-type MOSFET.

4. The current source of claim 2, wherein a first current source is coupled between a substrate power supply and the first terminal of the third transistor and a second current source is coupled between the substrate power supply and the first terminal of the fourth transistor.

5. The current source of claim 4, wherein the first current source provides a first current that is approximately four times a second current provided by the second current source.

6. The current source of claim 1, wherein the level shifter comprises a plurality of transistors coupled in parallel, wherein each transistor has a first terminal coupled to the third terminal of the third transistor and a third terminal coupled to the first terminal of the second transistor.

7. The current source of claim 6, wherein each transistor in the plurality of transistors are P-type MOSFET (metal-oxide semiconductor field-effect transistors).

8. The current source of claim 6, wherein each transistor in the plurality of transistors have identical geometries.

9. The current source of claim 1, wherein the first stage comprises:

a fifth transistor and a sixth transistor serially coupled together, wherein a first terminal of the sixth transistor is coupled to a second terminal of the fifth transistor;

a seventh transistor having a first terminal coupled to a third terminal of the fifth transistor; and

a second level shifter coupled to a third terminal of the seventh transistor and the first terminal of the sixth transistor, the second level shifter containing circuitry to elevate a voltage at a third terminal of the sixth transistor.

10. The current source of claim 9, wherein the second level shifter is arranged in a source-follower configuration.

11. The current source of claim 9, wherein the second level shifter comprises an eighth transistor having a first terminal coupled to the third terminal of the seventh transistor and a third terminal coupled to the first terminal of the sixth transistor.

12. The current source of claim 11, wherein the fifth, sixth, and seventh transistors are N-type MOSFET (metal-oxide semiconductor field-effect transistors), and wherein the eighth transistor is a P-type MOSFET.

13. The current source of claim 11, wherein a third current source is coupled between a substrate power supply and the first terminal of the seventh transistor and a fourth current source is coupled between the substrate power supply and the first terminal of the eighth transistor.

14. The current source of claim 13, wherein the third current source provides a third current that is approximately four times a fourth current provided by the fourth current source.

15. The current source of claim 9, wherein the first terminal of the fifth transistor is coupled to the input current source.

16. The current source of claim 1, wherein the first terminal is a source terminal, the second terminal is a drain terminal, and the third terminal is a gate terminal.

17. A current source comprising:

a first stage coupled to an input current source, the first stage comprising:

a first transistor and a second transistor serially coupled together, wherein a first terminal of the second transistor is coupled to a second terminal of the first transistor;

a third transistor having a first terminal coupled to a third terminal of the first transistor;

a second level shifter coupled to a third terminal of the third transistor and the first terminal of the second transistor, the second level shifter containing circuitry to elevate a voltage at a third terminal of the second transistor;

the current source further comprising a second stage coupled to the first stage, the second stage comprising:

a fourth transistor and a fifth transistor serially coupled together, wherein a first terminal of the fifth transistor is coupled to a second terminal of the fourth transistor;

a sixth transistor having a first terminal coupled to a third terminal of the fourth transistor; and

a level shifter coupled to a third terminal of the sixth transistor and the first terminal of the fifth transistor, the level shifter containing circuitry to elevate a voltage at a third terminal of the fifth transistor, wherein the level shifter is arranged in a source-follower configuration.

18. The current source of claim 17, wherein the level shifter comprises a seventh transistor having a first terminal coupled to the third terminal of the sixth transistor and a third terminal coupled to the first terminal of the fifth transistor and wherein the second level shifter comprises

an eighth transistor having a first terminal coupled to the third terminal of the third transistor and a third terminal coupled to the first terminal of the second transistor.

19. The current source of claim 18, wherein the seventh and the eighth transistors have identical geometries.

20. The current source of claim 17, wherein the level shifter comprises a plurality of transistors coupled in parallel, wherein each transistor has a first terminal coupled to the third terminal of the sixth transistor and a third terminal coupled to the first terminal of the fifth transistor and wherein the second level shifter comprises a second plurality of transistors coupled in parallel, wherein each transistor has a first terminal coupled to the third terminal of the third transistor and a third terminal coupled to the first terminal of the second transistor.

21. The current source of claim 20, wherein each transistor in the plurality of transistors and the second plurality of transistors have identical geometries.

22. The current source of claim 17, wherein the current source is used in a wireless device.

23. A current source comprising:

a first stage coupled to an input current source, the first stage containing circuitry to receive an input current provided by the input current source;

a second stage coupled to the first stage, the second stage comprising:

a first transistor and a second transistor serially coupled together, wherein a first terminal of the second transistor is coupled to a second terminal of the first transistor;

a level shifter coupled to a third terminal of the second transistor and a second terminal of the first transistor, the level shifter containing circuitry to elevate a voltage at the third terminal of the second transistor, wherein the level shifter is arranged in a source-follower configuration; and

a third transistor having a third terminal coupled to the level shifter.

24. The current source of claim 23, wherein the level shifter comprises a fourth transistor having a second terminal coupled to the third terminal of the second transistor and to the third terminal of the third transistor.

25. The current source of claim 24, wherein the first, second, and third transistors are P-type MOSFET (metal-oxide semiconductor field-effect transistors), and wherein the fourth transistor is an N-type MOSFET.

26. The current source of claim 24, wherein a first current source is coupled between a substrate ground and the fourth transistor.

27. The current source of claim 23, wherein the first terminal is a source terminal, the second terminal is a drain terminal, and the third terminal is a gate terminal.